

# Supplemental Material for StylePart: Image-based Shape Part Manipulation

I-Chao Shen<sup>1\*</sup>, Li-Wen Su<sup>2</sup>, Yu-Ting Wu<sup>3</sup> and Bing-Yu Chen<sup>2</sup>

<sup>1</sup>Computer Science Department, The University of Tokyo .

<sup>2</sup>Computer Science Department, National Taiwan University, .

<sup>3</sup>Computer Science Department, National Taipei University, .

\*Corresponding author(s). E-mail(s):

[ichaoshen@g.ecc.u-tokyo.ac.jp](mailto:ichaoshen@g.ecc.u-tokyo.ac.jp);

Contributing authors: [susan31213@gmail.com](mailto:susan31213@gmail.com);

[yutingwu@mail.ntpu.edu.tw](mailto:yutingwu@mail.ntpu.edu.tw); [robin@ntu.edu.tw](mailto:robin@ntu.edu.tw);

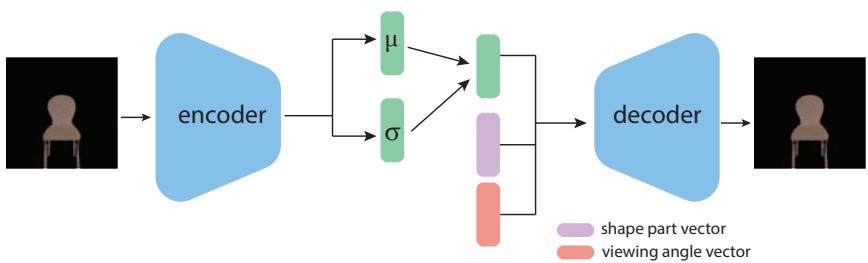
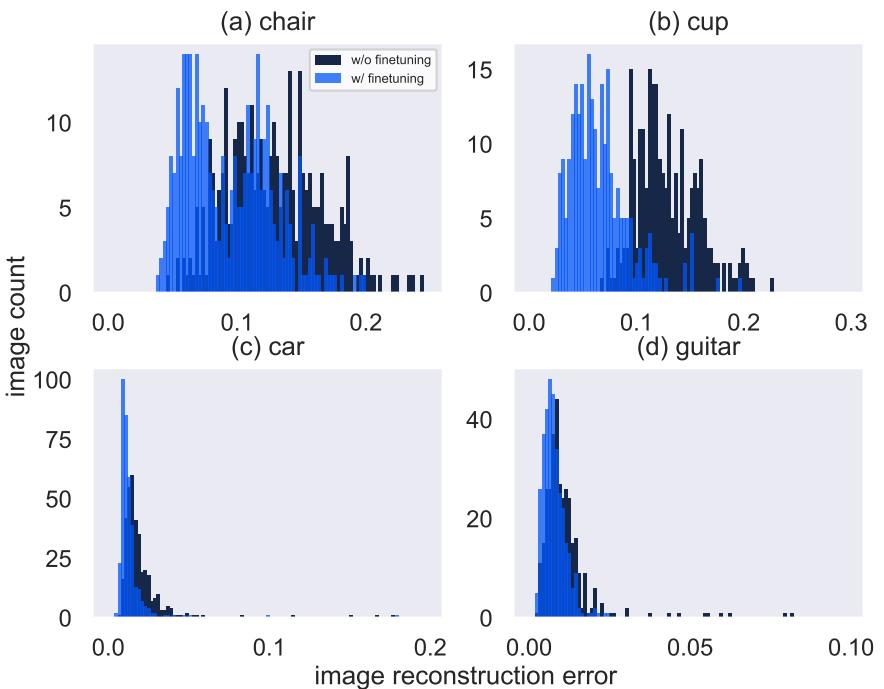
**Keywords:** image editing, image generative model, 3D shape generative model, latent vector mapping function

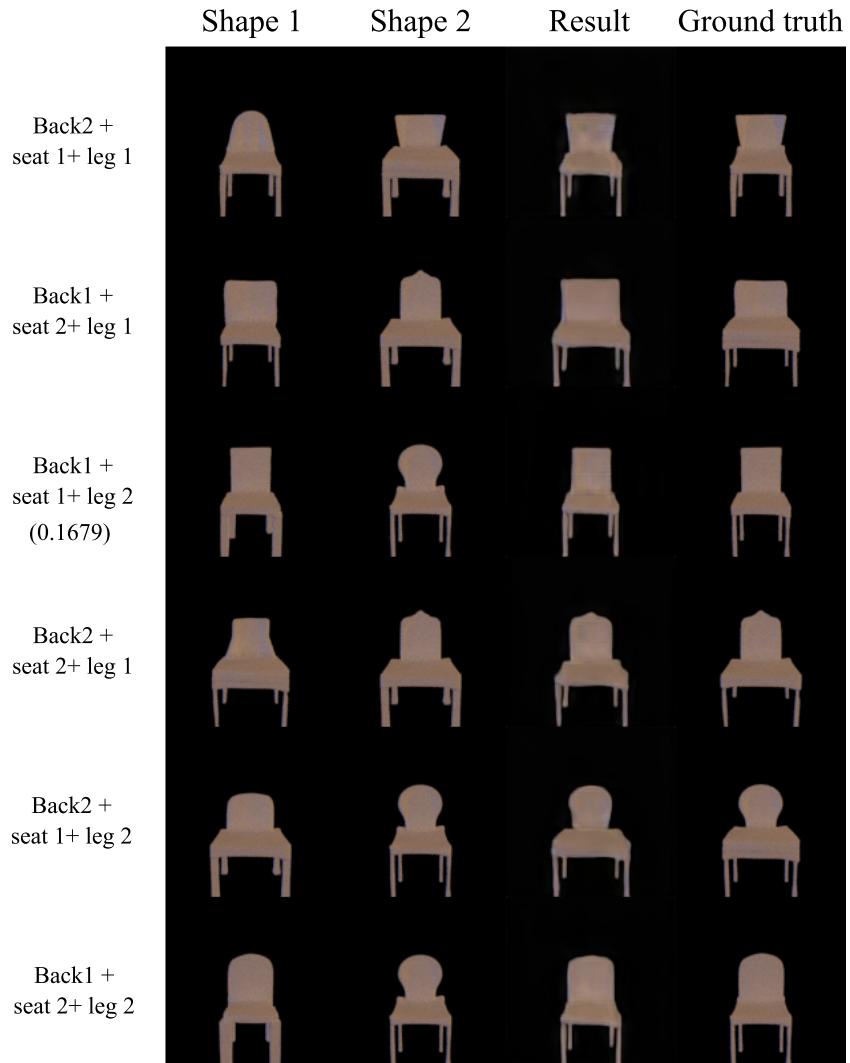
## 1 Experiment information

We show the architecture of the conditional variational autoencoder (cVAE) we used as the baseline disentangled method in Figure 1. We also show the image reconstruction perceptual loss distribution in Figure 2. We can observe that for the chair and cup categories, the error distributions were significantly lower when the network was trained with *size finetuning*.

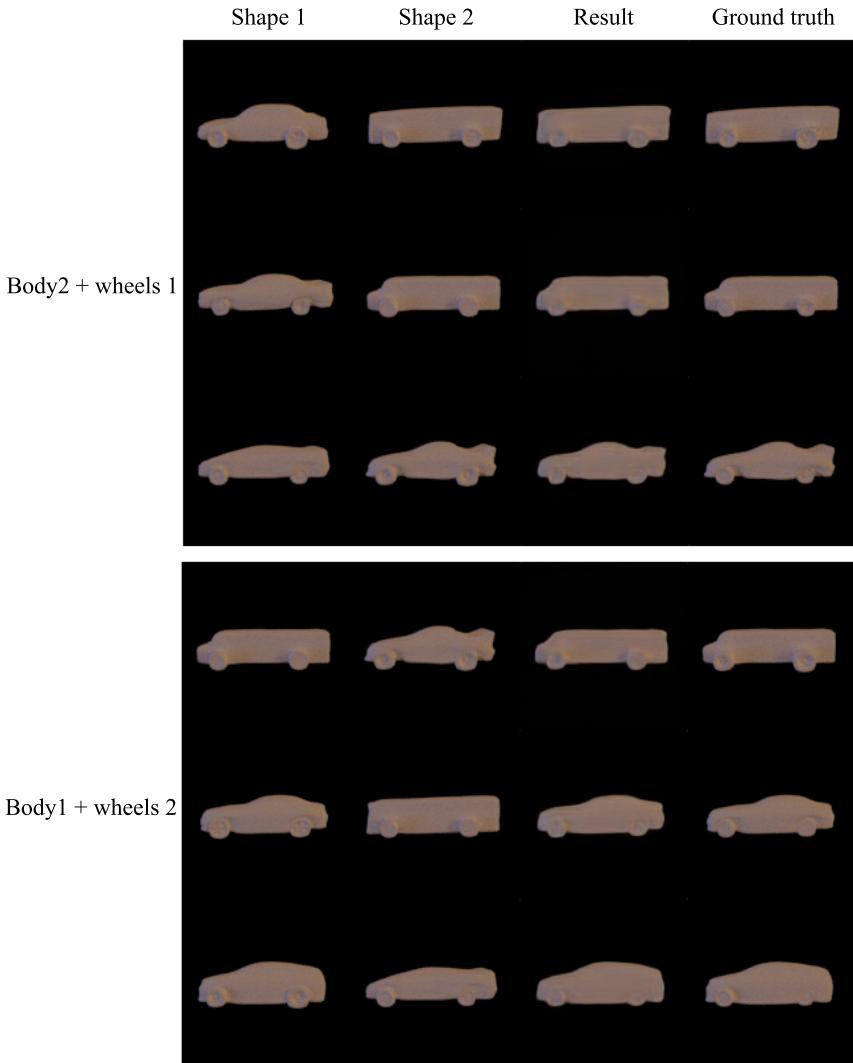
## 2 Part replacement results

We show more results on part replacement in Figure 3, Figure 4, Figure 5, and Figure 6.

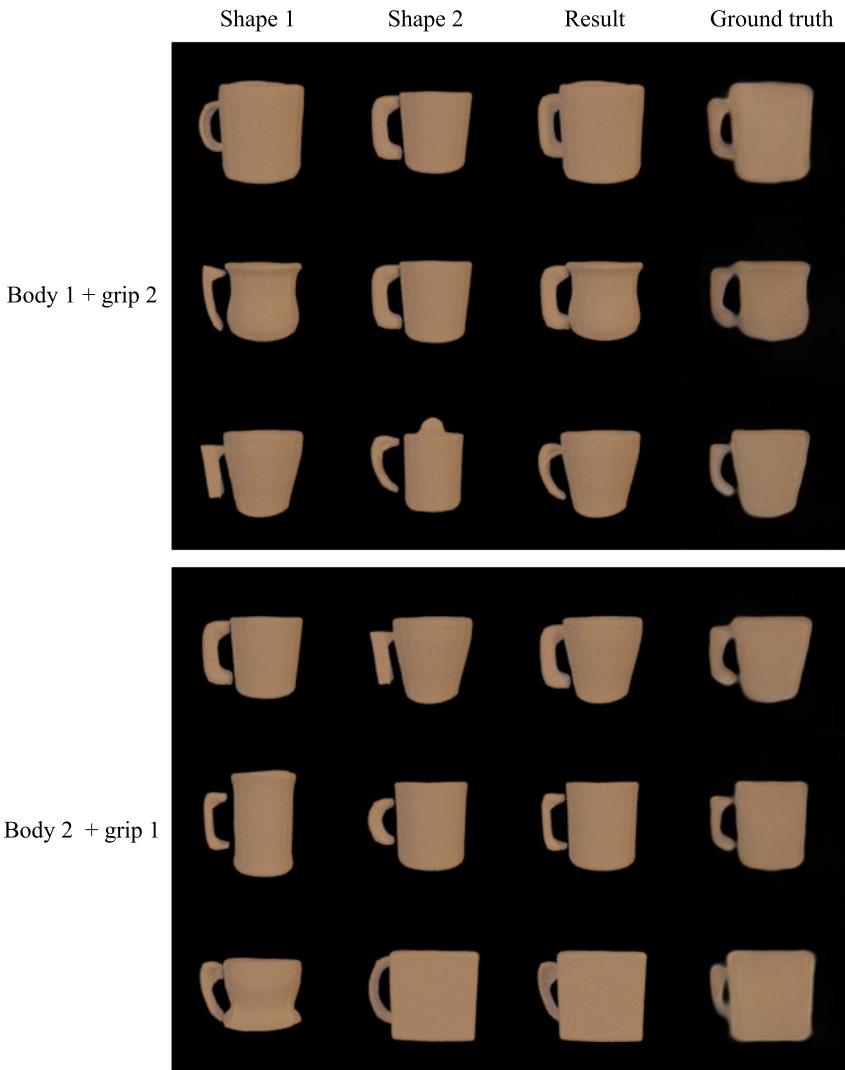
2 *Supplemental Material for StylePart: Image-based Shape Part Manipulation***Fig. 1** The architecture of the baseline cVAE method.**Fig. 2** The perceptual loss distributions of the image shape reconstruction with and without size finetuning.



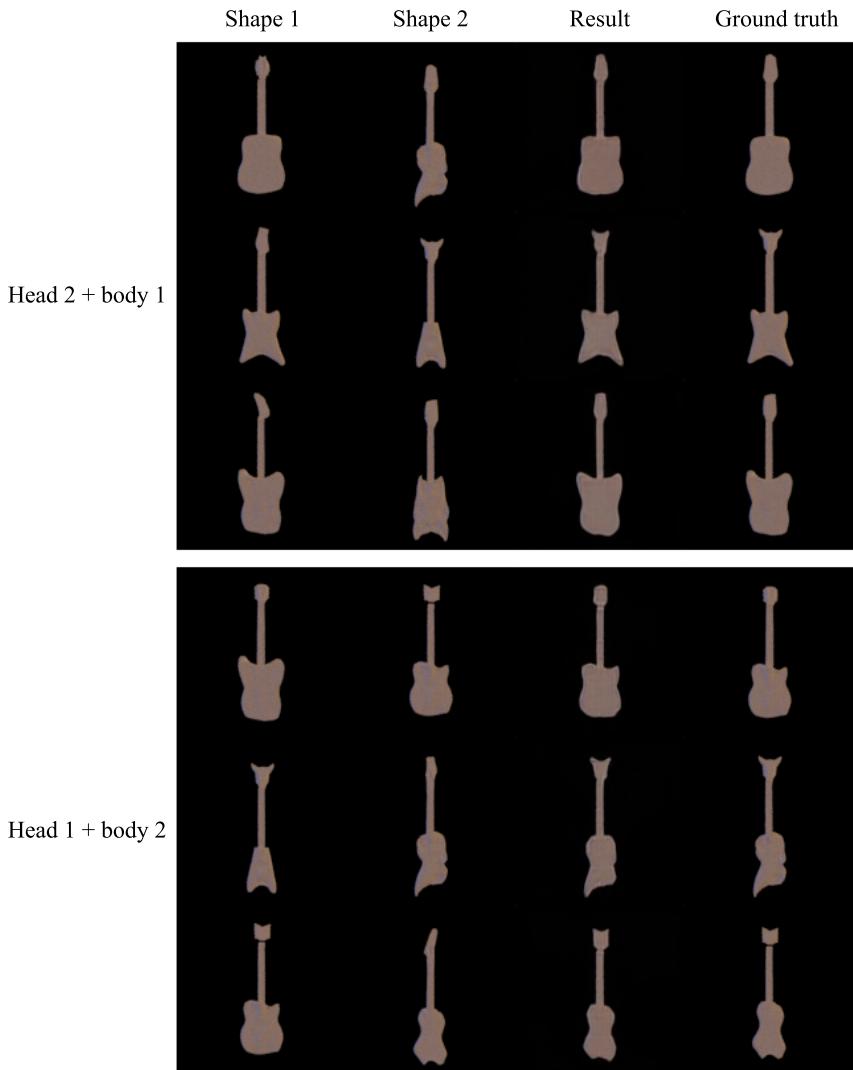
**Fig. 3** The results of part replacing in chair category. The result images are produced from the shape attributes composed of shape 1 and shape 2.

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**Fig. 4** The results of part replacing in car category. The result images are produced from the shape attributes composed of shape 1 and shape 2.



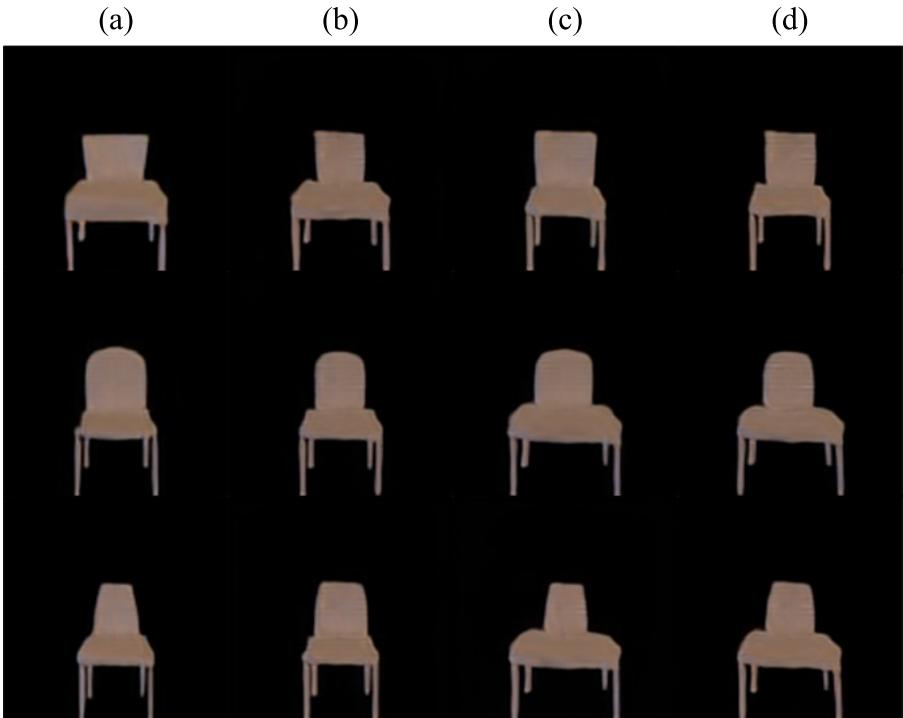
**Fig. 5** The results of part replacing in cup category. The result images are produced from the shape attributes composed of shape 1 and shape 2.

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**Fig. 6** The results of part replacing in guitar category. The result images are produced from the shape attributes composed of shape 1 and shape 2.

### 3 Part resizing results

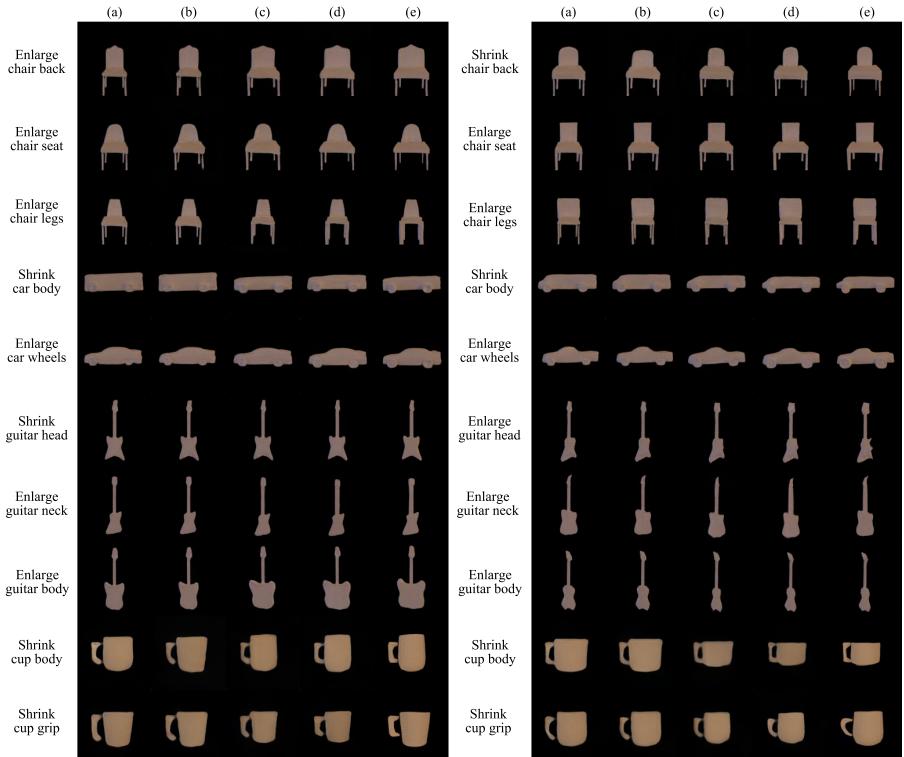
We show more results on part replacement in Figure 7.



**Fig. 7** The results of part resizing in different categories. (a) is the source image, (b) is the result from mapping the  $P + rP$  directly, (c) is the GAN space trajectory finetuner result, (d) is the inverted result of ground truth, and (e) is the rendered ground truth.

#### *Using multiple finetuner on the same image*

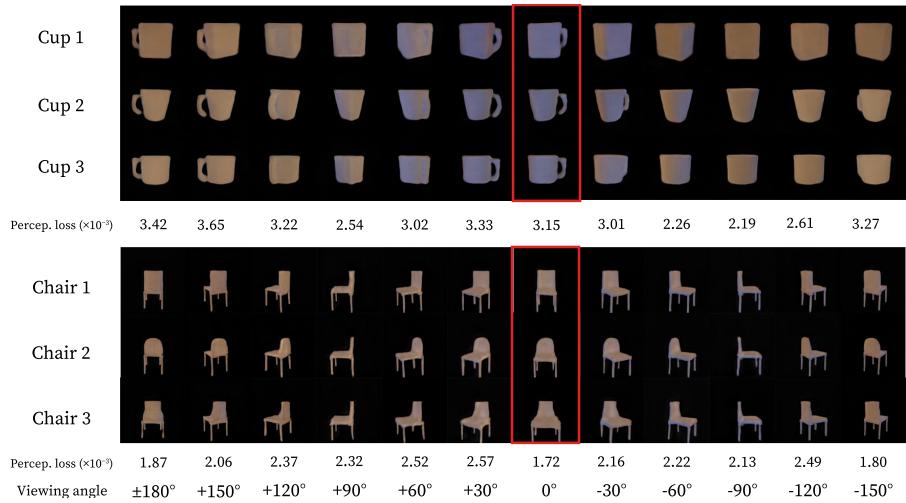
We show more results on part replacement in Figure 8.

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**Fig. 8** The results of part resizing with multiple GAN latent trajectory finetuners. (a) is the source image, (b) is the result of back finetuner, (c) is the seat finetuner result, (d) is the result of both finetuners.

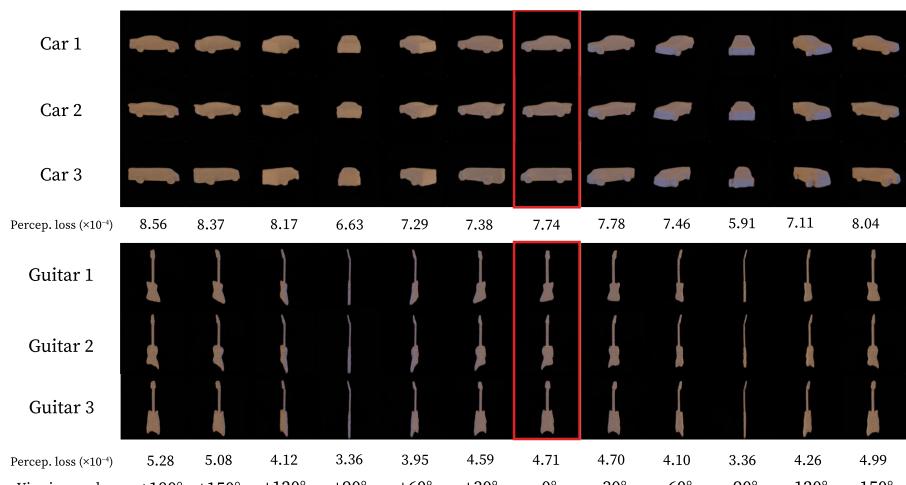
## 4 Viewing angle manipulation results

We show more results on viewing angle manipulation in Figure 9 and Figure 10.



**Fig. 9** The results of viewing angle manipulation in chair and cup categories.

## References



**Fig. 10** The results of viewing angle manipulation in car and guitar categories.